CLAIMS

1   1.   A method for monitoring and visualizing a plurality of metrics in a dynamic data

2   space, the method comprising:

3   defining metrics, each of said defined metrics corresponding to at least

4   one entity in the dynamic data space;

5   determining a value for each of said defined metrics; and

6   providing graphical display representations of selected ones of said

7   determined values in a graphical user interface, said graphical interface

8   changing to reflect changes to said selections.

2   2.   The method according to claim 1, wherein said defining step, comprises:

2   defining a maximum and a minimum value for each of said metrics;

3   quantizing discrete levels between said defined maximum and said

4   defined minimum value; and

5   assigning a unique indicator to each of said quantized discrete levels.

1   3.   The method according to claim 2, wherein said assigning step, comprises

2   designating a unique indicator selected from the group consisting of a different

3   color, a different shade and a different pattern to each of said quantized discrete

4   level.

1 4. The method according to claim 1, wherein said determining step, comprises

2   interrogating each said entity within the dynamic data space for said determined

3   value.

1 5. The method according to claim 1, wherein said determining step further

2   comprises automatically updating said graphical display representations of said

3   selected ones of said determined values in said graphical user interface.

1 6. The method according to claim 1, wherein said providing step, comprises:

2   forming a graphical representation of said at least one entity in the

3   dynamic data space; and

4   modifying said graphical representation with a visual indicator

5   corresponding to said determined value.

1 7. The method according to claim 1, wherein said selected ones of said metrics are

2   selected from a list of metrics displayed within said graphical user interface.

1 8. The method according to claim 1, further comprising updating said graphical

2   representations dynamically based upon subsequent value determinations.

1 9. The method according to claim 1, wherein said determining step and said

2   providing step are configurably periodic.

1   10.   A method for visualizing metrics for at least one component in a heterogeneous

2   content delivery network(CDN), the method comprising:

3   defining metrics characterizing the performance of the component in the

4   CDN;

5   computing values for said defined metrics; and

6   providing a graphical display of said computed values, said graphical

7   display displaying selected ones of said defined metrics, said graphical display

8   changing in response to changes in said computed values and changes

9   occurring in said components.

1   11.   The method according to claim 10, wherein said defined metrics are selected

2   from the group consisting of CPU load, run queue size, memory usage,

3   connections, and disk I/O usage.

1   12.   The method according to claim 10, wherein said defining step, comprises:

2   defining a maximum value and a minimum value for each of said defined

3   metrics;

4   quantizing discrete levels between said defined maximum value and said

5   defined minimum value; and

6   assigning a unique indicator to each said quantized discrete level.

13. The method according to claim 12, wherein said assigning step, comprises designating a unique indicator selected from the group consisting of a different color, a different shade, and a different pattern to each of said quantized discrete level.

14. The method according to claim 10, wherein said computing step, comprises interrogating each one of said components for said computed values.

15. The method according to claim 10, further comprising updating said graphical representations dynamically based upon subsequent value determinations.

16. The method according to claim 10, wherein said step of providing said graphical display, comprises:

    providing a graphical representation of each one said of components, each one of said components represented by a node in said graphical display; and

    modifying said graphical display with a visual indicator corresponding to said computed values.

17. The method according to claim 10, wherein said defined metrics are selected from a list of metrics displayed within said graphical display.

1 18. The method according to claim 10, wherein said computing step and said

2 providing step are configurably periodic.

1 19. A method for monitoring a component in a CDN, comprising:

2 selecting at least one monitored metric corresponding to a component in

3 the CDN;

4 determining a value for said selected metric;

5 computing a display indicator based on said determined value; and

6 providing said display indicator on a graphical display, said display

7 indicator providing a visual representation of said monitored metric for the

8 component in the network.

1 20. The method according to claim 19, wherein said monitored metric comprises a

2 CPU load, a network capacity, a run queue size, a connection capacity, a

3 memory usage, a page ins capacity, a disk I/O, and a reference count.

1 21. The method according to claim 19, wherein said display indicator is an indicator

2 selected from the group consisting of a color, a shade of gray, and a pattern.

1 22. The method according to claim 19, wherein said step of computing a display

2 indicator comprises:

3   assigning a discrete quantized level to said determined value based on a

4   predefined maximum and a predefined minimum value for each said metric;

5   and

6   selecting said display indicator based on said assigned quantized level.

1   23.   A system for monitoring of components in a CDN, comprising:

2   an agent for retrieving values for metrics from the components within said

3   CDN;

4   a processor for determining a graphical representation for each of said

5   retrieved values; and

6   a graphical user interface for presenting said determined graphical

7   representation, said graphical user interface having a selectable list of said

8   metrics, said graphical user interface changing to reflect changes to said

9   selections.

1   24.   A machine readable storage having stored thereon, a computer program having

2   a plurality of code sections for visualizing a plurality of metrics in a dynamic data

3   space, said code sections executable by a machine for causing the machine to

4   perform the steps of:

5   defining metrics, each of said defined metrics corresponding to at least

6   one entity in the dynamic data space;

7   determining a value for each of said defined metrics; and

8   providing graphical display representations of selected ones of said

9   determined values in a graphical user interface, said graphical interface

10   changing to reflect changes to said selections.

1   25.   The machine readable storage according to claim 24, wherein said defining step,

2   comprises:

3   defining a maximum and a minimum value for each of said metrics;

4   quantizing discrete levels between said defined maximum and said

5   defined minimum value; and

6   assigning a unique indicator to each of said quantized discrete levels.

1   26.   The machine readable storage according to claim 25, wherein said assigning

2   step, comprises designating a unique indicator selected from the group

3   consisting of a different color, a different shade and a different pattern to each of

4   said quantized discrete levels.

1   27.   The machine readable storage according to claim 24, wherein said determining

2   step, comprises interrogating each said entity within the dynamic data space for

3   said determined value.

1   28.   The machine readable storage according to claim 24, wherein said determining

2   step further comprises automatically updating said graphical display

3   representations of said selected ones of said determined values in said graphical

4   user interface.

1   29.   The machine readable storage according to claim 24, wherein said providing

2   step, comprises:

3   forming a graphical representation of said at least one entity in the

4   dynamic data space; and

5   modifying said graphical representation with a visual indicator

6   corresponding to said determined value.

1   30.   The machine readable storage according to claim 24, wherein said selected

2   ones of said metrics are selected from a list of metrics displayed within said

3   graphical user interface.

1   31.   The machine readable storage according to claim 24, further comprising

2   updating said graphical representations dynamically based upon subsequent

3   value determinations.

1   32.   The machine readable storage according to claim 24, wherein said determining

2   step and said providing step are configurably periodic.

1 33. A machine readable storage having stored thereon, a computer program having

2 a plurality of code sections for visualizing metrics for at least one component in a

3 complex heterogeneous CDN, said code sections executable by a machine for

4 causing the machine to perform the steps of:

5 defining metrics characterizing the performance of the component in the

6 CDN;

7 computing values for said defined metrics; and

8 providing a graphical display of said computed values, said graphical

9 display displaying selected ones of said defined metrics, said graphical display

10 changing in response to changes in said computed values and changes

11 occurring in said components.

1 34. The machine readable storage according to claim 33, wherein said defined

2 metrics are selected from the group consisting of a CPU load, a run queue size,

3 memory usage, connections, and a disk I/O usage.

1 35. The machine readable storage according to claim 33, wherein said defining step,

2 comprises:

3 defining a maximum value and a minimum value for each of said defined

4 metrics;

5 quantizing discrete levels between said defined maximum value and said

6 defined minimum value; and

7   assigning a unique indicator to each said quantized discrete level.

1   36.   The method according to claim 35, wherein said assigning step, comprises

2   designating a unique indicator selected from the group consisting of a different

3   color, a different shade, and a different pattern to each of said quantized discrete

4   levels.

1   37.   The machine readable storage according to claim 33, wherein said computing

2   step, comprises interrogating each one of said components for said computed

3   values.

1   38.   The machine readable storage according to claim 33, further comprising

2   updating said graphical representations dynamically based upon subsequent

3   value determinations.

1   39.   The machine readable storage according to claim 33, wherein said step of

2   providing said graphical display, comprises:

3   providing a graphical representation of each one of said components,

4   each one of said components represented by a node in said graphical display;

5   and

6   modifying said graphical display with a visual indicator corresponding to

7   said computed values.

1   40.   The machine readable storage according to claim 33, wherein said defined

2   metrics are selected from a list of metrics displayed within said graphical display.

1   41.   The machine readable storage according to claim 33, wherein said computing

2   step and said providing step are configurably periodic.

1   42.   A machine readable storage having stored thereon, a computer program having

2   a plurality of code sections for monitoring a component in a CDN, said code

3   sections executable by a machine for causing the machine to perform the steps

4   of:

5   selecting at least one monitored metric corresponding to a component in

6   the CDN;

7   determining a value for said selected metric;

8   computing a display indicator based on said determined value; and

9   providing said display indicator on a graphical display, said display

10   indicator providing a visual representation of said monitored metric for the

11   component in the CDN.

1   43.   The machine readable storage according to claim 42, wherein said monitored

2   metric comprises a CPU load, network capacity, run queue size, connection

3   capacity, memory usage, page ins capacity, disk I/O, and a reference count.

1   44.   The machine readable storage according to claim 42, wherein said display

2   indicator is an indicator selected from the group consisting of a color, a shade of

3   gray, and a pattern.

1   45.   The machine readable storage according to claim 42, wherein the step of

2   computing a display indicator comprises:

3   assigning a discrete quantized level to said determined value based on a

4   predefined maximum and a predefined minimum value for each said metric;

5   and

6   selecting said display indicator based on said assigned quantized level.